

WHAT IS CLAIMED IS:

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- 1. A method for enhancing the confidence in detecting the presence of an analyte in a sample suspected of containing said analyte, said method comprising:
- (a) subjecting a combination of at least two predetermined derivatives of said analyte to chromatographic separation and
- (b) determining the retention times of said derivatives as a result of said chromatographic separation, said retention times being related to the presence of said analyte in said sample.
- 2. A method according to Claim 1 wherein said chromatographic separation is selected from the group consisting of gas chromatography, liquid chromatography, electrophoretic chromatography and combinations thereof.
- 15 3. A method according to Claim 1 further comprising detecting a response from each of said derivatives and determining the intensities thereof, the number and intensities of said responses being related to the presence and/or amount of said analyte in said sample.
- 4. A method according to Claim 3 wherein said detecting is conducted visually, spectrophotometrically, thermally, electrically, mechanically or electromechanically.
- 5. A method according to Claim 1 wherein said analyte is selected from the group consisting of drugs of abuse, pharmaceutical drugs, metabolites, pesticides, pollutants, nucleotides, polynucleotides, polysaccharides, amino acids and poly(amino acids).
- 6. A method according to Claim 1 wherein said derivatives are formed in 30 situ.
 - 7. A method for detecting the presence and/or amount of an analyte in a sample suspected of containing said analyte, said method comprising:

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- (a) subjecting a combination comprising at least two predetermined derivatives of said analyte to chromatographic separation to separate said derivatives,
- (b) subjecting said separated derivatives exiting from said chromatographic separation to ionization to form ions of said derivatives,
 - (c) detecting a response from each of said ions and
- (d) determining the retention times of said ions and the ratios of the intensities of said responses, said retention times and said ratios being related to the presence and/or amount of said analyte in said sample.
- 8. A method according to Claim 7 wherein said analyte is selected from the group consisting of drugs of abuse, pharmaceutical drugs, metabolites, pesticides, pollutants, nucleotides, polynucleotides, polysaccharides, amino acids and poly(amino acids).
 - 9. A method according to Claim 7 wherein said analyte is a drug of abuse.
 - 10. A method according to Claim 7 wherein said ionization is selected from the group consisting of chemical ionization, electrospray ionization, electron impact ionization, photoionization, and electron capture ionization.
 - 11. A method according to Olaim 7 wherein said derivatives are formed in situ.
 - 12. A method according to Claim 7 wherein said detecting comprises subjecting said ions to mass analysis.
 - 13. A method for detecting the presence and/or amount of a drug in a sample suspected of containing said drug, said method comprising:
 - (a) combining said sample with at least two predetermined derivatizing agents to form derivatives of said analyte,
 - (b) subjecting said derivatives to gas chromatographic separation to separate said derivatives,
 - (c) subjecting/said separated derivatives to chemical ionization to form ions thereof,

Attorney Docket No. 10003375-1

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- (d) subjecting said ions to mass analysis and detecting a response therefrom and
- (e) determining the retention times of said ions and the ratios of the intensities of said responses, said retention times and said ratios being related to the presence and/or amount of said drug in said sample.
- 14. A method according to Claim 13 wherein said/chemical ionization comprises negative ion chemical ionization.
 - 15. A method according to Claim 13 wherein said Arug is a drug of abuse.
- 16. A method according to Claim 13 wherein said derivatizing agents are selected from the group consisting of organic acids, organic acid anhydrides, amines, alcohols, esters, organometallic compounds and complexing agents.
- 17. A method according to Claim 13 wherein said derivatizing agents comprise at least one halogen moiety.
- 18. A method according to Claim 13 wherein said drug of abuse is selected from the group consisting of alkaloids, steroids, lactams, aminoalkylbenzenes and benzheterocyclics.
- 19. A method for detecting the presence and/or amount of a drug of abuse in a sample suspected of containing said/drug of abuse, said method comprising:
- (a) combining said sample with at least two predetermined derivatizing agents,
- (b) subjecting said combination to conditions under which derivatives of said analyte are formed,
- (c) subjecting said derivatives to gas chromatographic separation to separate said derivatives,
- (d) subjecting said derivatives to negative ion chemical ionization to form negative ions of said derivatives,
- subjecting said ions to mass analysis and detecting a response therefrom and

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- determining the retention times of said ions and the ratios of the intensities of said responses, said retention times and said ratios being related to the presence and/or amount of said drug in said sample.
- 20. A method according to Claim 19 wherein said derivatizing agents are selected from the group consisting of organic acids organic acid anhydrides, amines, alcohols, esters, organometallic compounds and complexing agents.
- 21. A method according to Claim 19 wherein said derivatizing agents comprise at least one halogen moiety.
- 22. A method according to Claim 19 wherein said drug of abuse is selected from the group consisting of alkaloids, steroids, lactams, aminoalkylbenzenes and benzheterocyclics.

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